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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/555,269	11/01/2005	Johannes Van Nieuwenburg	NL 030454	4509

24737 7590 04/06/2007

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
FUTEL, GAYLA S	
ART UNIT	PAPER NUMBER
2609	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/555,269	NIEUWENBURG, JOHANNES VAN	
	Examiner	Art Unit	
	Gayla Futel	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-13 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-13 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 01 November 2005 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING (S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because the drawings lack ample description of the components. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The disclosure is objected to because of the following informalities: On page 4, lines 14-15, the specification refers to "carrier signal 30" in Figure 3. However, the

reference number given in the specification does not match the reference number of the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 2, 4, 5, 7, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uwabata et al. (US Patent No. 5,103,295) in view of Fiumani (US Patent No. 4,272,845).

7. Regarding Claims 1, 12, and 13 Uwabata et al. teaches the demodulator (Fig. 2) arranged to demodulate a first signal with the aid of a second signal, the demodulator comprising:

-A first band pass filter (**Fig. 2, #23**) arranged to recover the first signal from a received signal (**Col. 5, lines 58-59; band-limited signal from filter 23**); and

-A second band pass filter (**Fig. 2, #24**) arranged to recover the second signal from the received signal (**Col. 5, lines 62-63; band-limited signal from filter 24**). However, Uwabata et al. fails to explicitly teach that the pass band of the second band-pass filter is substantially narrower than the pass band of the first band pass filter. Fiumani teaches a receiver (**Fig. 1**) that demodulates a signal through a channel filter

(**Fig. 1, FR**) and a carrier filter (**Fig. 1, FP**). The channel filter of a receiver would have a larger pass band than the carrier filter since the carrier filter would travel through the channel (**Col. 1, lines 27-30**). It would have been obvious to one of ordinary skill in the art to use the filters of Fiumani in the demodulation unit of Uwabata et al. because the two filters of different pass-bands would allow for better recovery of the carrier signal.

8. Regarding Claim 2, Uwabata et al. and Fiumani teach the demodulator of Claim 1 as stated above. Fiumani further teaches a compensation means for compensating phase error between the recovered first and second signals (**Col. 2, lines 63-67; amplitude demodulator that delivers a replica of the filtered carrier signal**).

9. Regarding Claim 4, Uwabata et al. and Fiumani teach the demodulator of Claim 2 as stated above. Fiumani further teaches the compensation means comprises a phase shifter (**Fig. 1, phase shifter**) that is arranged to shift a phase of the recovered first signal, the phase shift being dependent upon the phase difference between the recovered second signal and a reference signal (**Col 2, line 67-Col. 3, line 2**).

10. Regarding Claim 5, Uwabata et al. and Fiumani teach the demodulator of Claim 4 as stated above. Fiumani further teaches that the compensation means comprises a selector that is arranged to select the reference signal from at least two sources. Fiumani teaches that the phase error detector (**Fig. 1, RE; Fig. 3**) comprises of threshold comparators (**Fig. 3, CP_3 and CP_4**), which receive voltages threshold voltages as well as the demodulated signal BB to compare (**Col. 4, lines 14-19**).

11. Regarding Claim 6, Uwabata et al. and Fiumani teach the demodulator of Claim 5 as stated above. However, neither reference explicitly states that the selector is a

programmable selector. It would have been obvious to one of ordinary skill in the art to choose a programmable selector instead of the selector of Fiumani. The reason being the programmable selector would allow for changing the reference voltages via a computer and therefore would allow more flexibility for the demodulator.

12. Regarding Claim 7, Uwabata et al. and Fiumani teach the demodulator of Claim 5 as stated above. Fiumani further teaches that one of the at least two sources is a demodulated first signal (**Col. 4, lines 14-19**).

13. Regarding Claims 8 and 9, Uwabata et al. and Fiumani teach the demodulator of Claim 5 as stated above. However, neither reference explicitly states that one of the two sources is an image of a demodulated first signal, which is stored in memory means or that the memory means comprises an analog to digital converter arranged to provide a digital image of the demodulated first signal. It would have been obvious to one of ordinary skill in the art to replace the selector circuit of Fiumani with an updated selector. The selector of Fiumani could be replaced with a digital automatic selector that is well known in the art, which will still select from at least two sources. Fiumani teaches that the selector will choose from the demodulated signal (**Col. 4, lines 14-19**) and two reference voltages. The automatic selector would have to select from an image of the demodulated signal since the demodulated signal is analog. To form the image, the analog demodulated signal would have to be stored in some type of memory means for the analog to digital conversion to occur.

14. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uwabata et al. and Fiumani as applied to claim 2 above, and further in view of Ohta (US Patent

No. 4,994,754). Uwabata et al. and Fiumani teach the demodulator of Claim 2, however neither teaches the compensation means comprises a delay element that is arranged to delay the recovered first signal. Ohta teaches a demodulating apparatus that includes a module for delaying a recovered signal (**Fig. 2, #14**) after the signal has passed through a phase detection circuit (**Col. 4, lines 31-36**). It would have been obvious to one of ordinary skill in the art to use the delay element of Ohta with the compensation means of Uwabata et al. and Fiumani because the delay element would prevent the two recovered signals from having the same phase and therefore, no phase error.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uwabata et al. and Fiumani as applied to claim 1 above, and further in view of Hyakutake (US Patent No. 4,933,767). Uwabata et al. and Fiumani teach the demodulator of Claim 1, however neither teaches the demodulator further comprises a phase locked loop for stabilizing the recovered second signal. Hyakutake teaches a processing circuit that recovers two signals from two band pass filters (**Fig. 6, #51, #53**). Hyakutake further teaches that one of the recovered signals passes through a phase locked loop (**Fig. 6, #59**). It would have been obvious to one of ordinary skill in the art to combine the phase locked loop of Hyakutake with the compensation means of Uwabata et al. and Fiumani. Phase locked loops provide stability to oscillating signals since they respond to the phase and frequency of the input signal. The recovered second signal would need to be stable so that the phase error between the first and second signal can also be stable.

16. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uwabata et al. and Fiumani as applied to claim 1 above, and further in view of Maddiotto et al.

(US Patent No. 6,690,735). Uwabata et al. and Fiumani teach the demodulator of Claim 1, however neither teaches the recovered second signal is used for frequency down converting at least a third signal. Maddiotto et al. teaches a signal output from one of two band pass filters is mixed with a sinusoidal signal from a local oscillator (**Col. 2, lines 26-30**). When an RF signal is combined with a local oscillation signal in a mixer, the output is a down-converted signal. It would have been obvious to one of ordinary skill in the art to combine the demodulation technique of Uwabata et al. and Fiumani with the demodulator of Maddiotto et al. because the down-conversion of the second recovered signal removes any remaining unwanted signals. The down-conversion will improve the quality of the recovered second signal.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Paul (US Patent No. 4,177,430)
- Hartson et al. (US Patent No. 6,433,835)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gayla Futel whose telephone number is 571-270-3008. The examiner can normally be reached on Mon-Thur 7:00 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GF

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